AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph beginning at page 3, line 15 with the following rewritten paragraph:

These and other objects, which will become readily apparent to those skilled in the art after reading this specification, have been accomplished by inventing a polymeric composition which comprises polymerizable units derived from at least one C_8 to C_{30} alkyl (meth)acrylate monomer, and at least one chain branching unit, said chain branching unit present in an amount not greater than 0.10 weight percent based on total weight of the polymeric composition. The presence of the chain branching unit ~~suprisingly~~ surprisingly results in the polymeric composition having non-gelled polymer chains~~, said non-gelled polymer chains~~ and having a weight average molecular weight of at least 100,000 g/mol.

Please replace the three paragraphs beginning at page 3, line 24 and ending on page 4, line 3 with the following rewritten paragraphs:

In one embodiment of the present invention, there is provided a polymeric composition having non-gelled polymer chains, comprising:

a) polymerizable units derived from at least one C_8 to C_{30} alkyl (meth)acrylate monomer, and

b) at least one chain branching unit, said chain branching unit present in an amount not greater than 0.10 weight percent based on total weight of the C_8 to C_{30} alkyl (meth)acrylate monomer,

wherein said ~~chain branching unit results in the~~ polymeric composition ~~having non-gelled polymer chains, and wherein said non-gelled polymer chains have~~ has a weight average molecular weight of at least 100,000 g/mol.

Please replace the six paragraphs beginning at page 4, line 4 and ending on page 4, line 16 with the following rewritten paragraphs:

In another embodiment of the present invention, there is provided a polymer blend composition, comprising at least the following:

a) at least one thermoplastic polymer resin, and

b) at least one polymeric composition <u>having non-gelled polymer chains</u>, said polymeric composition comprising:

i) polymerizable units derived from at least one C_8 to C_{30} alkyl (meth)acrylate monomer, and

ii) at least one chain branching unit, said chain branching unit present in an amount not greater than 0.10 weight percent based on total weight of the C_8 to C_{30} alkyl (meth)acrylate monomer,

wherein said ~~chain branching unit results in the~~ polymeric composition ~~having non-gelled polymer chains, and wherein said non-gelled polymer chains have~~ <u>has</u> a weight average molecular weight of at least 100,000 g/mol.

Please replace the six paragraphs beginning at page 4, line 17 and ending on page 5, line 2 with the following rewritten paragraphs:

In yet another embodiment of the present invention, there is provided a process for preparing an aqueous dispersion of polymer particles <u>comprising a polymeric composition having non-gelled polymer chains</u>, said process comprising the steps of:

a) preparing an aqueous emulsion of hydrophobic monomer droplets, said droplets comprising:

i) at least one C_8 to C_{30} alkyl (meth)acrylate monomer,

ii) at least one chain branching monomer, said chain branching monomer present in an amount not greater than 0.10 weight percent based on total weight of the C_8 to C_{30} alkyl (meth)acrylate monomer, and

iii) at least one emulsifier; and

b) polymerizing, by at least one technique selected from the group consisting of conventional emulsion polymerization, bulk polymerization and solution polymerization, said C_8 to C_{30} alkyl (meth)acrylate monomer with said at least one chain branching monomer using at least one free radical initiator to form said aqueous dispersion of polymer particles comprising a polymeric composition having non-gelled polymer chains, wherein said ~~chain branching monomer results in the polymer particles comprising non-gelled polymer chains, and wherein said non-gelled polymer chains have~~ polymeric composition has a weight average molecular weight of at least 100,000 g/mol.

Please replace the paragraph beginning at page 7, line 13 with the following rewritten paragraph:

The molecular weight of the polymeric compositions according to the present invention is typically at least 100,000 g/mol, more typically at least 200,000 g/mol, and even more typically at least 500,000 g/mol. While there is no upper limit to the molecular weight, a practical upper limit is when all of the polymer chains are crosslinked or gelled. In ensuring that non-gelled polymer chains are present, the molecular weight of the polymeric compositions will typically be less than 3,000,000 g/mol, more typically less

than 2,000,000 g/mol, and even more typically less than 1,500,000 g/mol.

Please replace the paragraph beginning at page 11, line 27 with the following rewritten paragraph:

In the process for making the polymeric additive compositions, the types of polymerizations that may used to form the polymeric additive compositions include conventional or "classical" emulsion (gradual addition/shot), miniemulsion, solution, and bulk, and any of these types of polymerization may proceed through the reaction mechanisms of radical chain (addition) or step reaction (condensation). Typically, free-radical emulsion polymerization is used as it readily forms polymer particles that can have a range of morphologies.

Please replace Example 5 and table, on pages 30-31 of the present specification with the following replacement Example 5 and table:

EXAMPLE 5

This example shows how the Jratio of polypropylene blends, degree of gelling, and molecular weight varies with the relative amount of chain branching monomer in the emulsion monomer mixtures. This example shows that the weight percentage of chain branching monomer should be no more than 0.10 weight percent based in amount of high-alkyl (meth)acrylate, since this amount of chain branching monomer results in production of polymeric compositions having no gel (i.e., having non-gelled polymer chains).

Three-stage polymer particles comprising the polymeric composition of the present invention as the core stage, were provided according generally to the process described in Example 1 with varying amounts of ALMA chain

branching monomers. The polymer particles were prepared from Stage I LMA-based polymer particles, thermal stabilizer, and a flow aid as provided in Example 3. The polymer particles were first tested for the presence of gelled polymer chains as follows.

A fixed amount of the polymeric composition to be tested (in the form of dry solid material) is placed in tetrahydrofurane ("THF") at room temperature. THF is chosen because it is known to be a good solvent for these types of materials, but other solvents, such as toluene or similar solvents can be used. Preferably, the polymeric composition makes up about 5 to 10 % by weight of the total mixture of solvent and polymeric composition. For example, 9.5 grams of THF and 0.5 grams of solid material are added together to make a 10-gram blend. The mixture is placed in a tightly sealed vial and placed in a shaking device that shakes the mixture for several hours, preferably overnight (for example, from 8 to 12 hours) to ascertain that the mixture has reached equilibrium.

After the mixture has been treated as above, it is visually examined. A clear, fully homogeneous solution with no visible gelatinous material present will indicate that the polymeric composition is fully soluble and, therefore, it is made up of "non-gelled polymer chains". In contrast, a polymeric composition that contains "gelled polymer chains", which is not in accordance with the present invention, will produce a visible gelatinous substance in the mixture. This gelatinous substance is generally visually distinguishable in the mixture of solvent and polymeric composition because it consists of solid material which is swollen with solvent and behaves in a rubber-like manner. It can be further separated from the rest of the material by decanting off the supernatant solvent, by filtration, or by centrifugation of the solvent.

In many cases the original solvent-polymeric composition mixture splits into two parts: one containing gelatinous material ("gelled polymer chains") and supernatant solvent that contains soluble polymeric composition having "non-gelled polymeric chains" - in other words, the original solid

polymeric composition contained both soluble ("non-gelled") and insoluble ("gelled") polymer chains. These two parts or components can be separated by either decanting, filtering or centrifuging the system. Further characterization of each phase (part) can then be carried out. Thermal analysis, etc. can be carried out in either part of the system by evaporating off the solvent. However, certain tests can be applied exclusively to the soluble phase (i.e., the supernatant solvent containing polymeric composition having non-gelled polymer chains) because only this portion the characteristics required to obtain trust-worthy test results. For example, molecular weight characterization by means of gel permeation chromatography (GPC) can be performed on the soluble phase only, because gelled material does not render reliable results from this test. For that reason, and to avoid the presence of gelled material and impurities in general, when GPC is performed, solutions are pre-filtered to obtain a free-flowing solution containing only polymeric composition having non-gelled polymer chains.

After being tested for the presence of gelled polymer chains, [[These]] the three-stage polymer particles comprising the polymeric composition of the present invention as the core stage, were blended at 5 % in polypropylene and tested for its Jratio according generally to the methods described in Example 3. Results indicated in the table below show that excessive gelled polymer in the polymeric composition results, apparently causing a reduction in the Jratio.

Ex.	Chain Branching Monomer, %	Jratio	[[Notes]] Results of Test for Presence of Gel	Peak Average MW, g/mol	Weight Average MW, g/mol
5a	0.028	1.99	no gel apparent	746,000	1,100,000
5b	0.057	4.58	no gel apparent	844,000	1,270,000
5c	0.114	1.13	Gelled polymer chains present (5% in THF)	360,000 (soluble portion only)	747,000 (soluble portion only)